

REMARKS

In the present application, claims 1-18 are pending. Claims 1, 3, 4, 8-10, 12, 13, 15, 17 and 18 are rejected. Claims 2, 5-7, 11, 14 and 16 are objected to. Claims 1, 2, 10, 11, 13, and 14 are amended herein. No new matter has been added. Claims 1-18 are believed to be in condition for allowance.

Claim Rejections – 35 USC § 102(b)

The Examiner rejected claims 1, 3, 4, 8-10, 12, 13, 15, 17 and 18 as being anticipated by Carter et al. (5,594,234). Specifically, with regards to claim 1, the Examiner asserted that Carter shows “an integrated circuit package comprising: a substrate 84 having a first surface and a second surface (e.g. fig. 11): a first die pad area 41, disposed on said first surface, said die pad area having dimensions suitable to mount an integrated circuit 83 thereon (see fig. 11); a plurality of thermally conductive signal elements disposed on the first surface of the substrate outside the die pad area, comprising a first signal pad row 41b and at least one additional signal pad row 41c; and a first plurality of thermally conductive thermal fingers 41a extending from said die pad area and thermally coupled thereto, said thermal fingers encompassing at least some individual ones of the pads of the first signal pad row.”

Applicants respectfully assert that claim 1, as amended, is clearly distinguishable from the teachings of Carter. Specifically, Carter does not teach a thermal finger at least partially encompassing an individual one of the pads of the first signal pad row as claimed. Carter further does not teach a first signal pad row between the die pad area and at least one additional signal pad row as claimed.

Claim 1 recites:

1. An integrated circuit package comprising:

a substrate having a first surface and a second surface;

a first die pad area, disposed on said first surface, said die pad area having dimensions suitable to mount an integrated circuit thereon;

a plurality of thermally conductive signal elements disposed on the first surface of the substrate outside the die pad area, comprising **a first signal pad row disposed between said die pad area and at least one additional signal pad row; and**

a first plurality of thermally conductive thermal fingers extending from said die pad area and thermally coupled thereto, **at least one thermal finger at least partially encompassing in a non-contact manner at least some individual ones of the pads of the first signal pad row.** (emphasis added)

Support for the amendment can be found, at least, at Figs. 5a-5c and in the description of 5a at paragraph [0032] of the specification.

Applicants respectfully assert that the Examiner is in error when citing “signal pad row 41b” and “additional signal pad row 41a”. As is clearly evident, both of the Examiner labeled elements, 41a and 41b, of Fig. 7 of Carter form a single row. The individual signal pads of both 41a and 41b are all aligned in a single row. Likewise, elements 41a and 41b are aligned. It is therefore the case that the structural elements 41a and 41b of **Carter form a single row and not a first signal pad row and additional signal pad row as claimed.** More specifically, Carter does not teach a first signal pad row between the additional signal pad row and the die pad area as claimed.

Applicants further assert that Carter does not teach a thermal finger at least partially encompassing an individual pad of the first signal pad row as claimed. First, there is no teaching or disclosure by Carter that the Examiner annotated element 41a is a thermal finger. As evidenced by the fact the Examiner was required to label element 41a, there is no reference to the otherwise unlabeled structure of Carter. Applicants note that Carter does disclose at col. 4, lines 52-55, “FIG. 10c shows the device of 10a with a thermal dissipating clip or finger in contact with and extend across the top of the package in contact with the exposed surface 73 of the thermal die pad.” As is evident from an examination of Fig. 10c, this sole reference to a thermal dissipating finger (72a) refers to a structure that extends into open space to dissipate heat and does not, in any manner, encompass any signal pad.

Appl. No. 10/815,583

Amdt. Dated, August 22, 2006

Reply to Office Action of March 2, 2006

Applicants therefore assert that the Examiner annotated element 41a of Carter is not a thermal finger and that the disclosed thermal dissipating finger 72a of Carter does not partially encompass any individual pads as claimed. Furthermore, were element 41a considered to be a thermal finger, Applicant emphatically asserting that it is not, element 41a does not encompass, partially or otherwise, any individual pads. In fact, as is clearly evident from the Examiner's annotated version of Fig. 7, element 41a is displaced off to the side of both elements 41b and 41c, enclosing neither.

For all of these reasons alone, claim 1 is in condition for allowance. Independent claims 10, as amended herein, likewise recites a "first signal pad row between said die pad area and at least one additional signal pad row" and "at least some individual ones of said relief structures at least partially surround at least one of said signal pads of said first signal pad row". Independent claim 13 recites "at least some individual ones of said relief structures at least partially encompass in a non-contact manner at least one signal pad of a first signal pad row". For the reasons discussed above with reference to claim 1, claims 10 and 13 are likewise in condition for allowance. As all of claims 3, 4, 8, 9, 12, 15, 17 and 18 depend upon claims 1, 10, and 13, they are likewise in condition for allowance.

Allowable Subject Matter

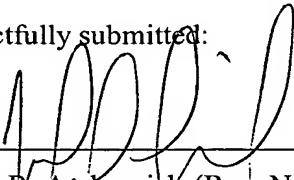
The Examiner objected to claims 2, 5-7, 11, 14 and 16 as being dependent upon a rejected base claim, but noted that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The claims have been so amended are now in condition for allowance.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims herein patentably define over the art relied on by the

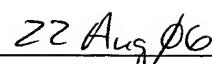
Appl. No. 10/815,583
Amdt. Dated, August 22, 2006
Reply to Office Action of March 2, 2006
Examiner and early allowance of same is courteously solicited.

Respectfully submitted:



Jeffrey R. Ambroziak (Reg. No. 47,387)

HARRINGTON & SMITH, LLP
4 Research Drive
Shelton, CT 06484-6212
Telephone: (203)925-9400
Facsimile: (203)944-0245
Customer No. 29683



Date

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450.

8/22/2006
Date

Elaine F. Main
Name of Person Making Deposit